Cisco UCS C24 M3 Rack Server

Product Overview

The form-factor-agnostic Cisco Unified Computing System™ (Cisco UCS™) combines Cisco UCS C-Series Rack Servers and B-Series Blade Servers with networking and storage access in a single converged system that simplifies management and delivers greater cost efficiency and agility with increased visibility and control. The latest expansion of the Cisco UCS portfolio includes the new Cisco UCS C24 M3 Rack Server. This new server increases compute density through more cores and cache balanced with adequate memory capacity, abundant internal disk drives and faster I/O. Together these server improvements and complementary Cisco UCS advancements deliver the combination of features and cost efficiency required to support IT's diverse server needs.

The Cisco UCS C24 M3 Rack Server (Figure 1) is designed for both outstanding economics and internal expandability. The Cisco C24 M3 Rack Server targets entry level virtualization, IT and web infrastructure as well as storage-intensive infrastructure workloads from big data and small to medium databases to file serving and windows storage servers. Building on the success of the Cisco UCS C-Series Rack Servers, the Cisco UCS C24 M3 server and the Cisco UCS Virtual Interface Card 1225 (VIC 1225) extend the capabilities of the Cisco UCS portfolio in a 2RU form factor with the Intel® Xeon® processor E5-2400 product family, which delivers an optimal combination of performance, flexibility, and efficiency gains. In addition, the Cisco UCS C24 M3 offers up to 12 DIMM slots, up to 12, 16 or 24 disk drives, 5 PCI express (PCIe) slots, and two 1 Gigabit Ethernet LAN-on-motherboard (LOM) ports to provide an exceptional internal storage capacity and price-to-performance ratio.

The Cisco UCS C24 M3 server interfaces with Cisco UCS using another Cisco® innovation: the Cisco UCS Virtual Interface Card 1225. The Cisco UCS Virtual Interface Card 1225 is a virtualization-optimized Fibre Channel over Ethernet (FCoE) PCIe 2.0 x8 10-Gbps adapter designed for use with Cisco UCS C-Series Rack Servers. The Virtual Interface Card 1225 is a dual-port 10 Gigabit Ethernet PCIe adapter that can support up to 18 PCIe standards-compliant virtual interfaces, which can be dynamically configured so that both their interface type (network interface card [NIC] or host bus adapter [HBA]) and identity (MAC address and worldwide name [WWN]) are established using just-in-time provisioning. In addition, the Cisco UCS VIC 1225 can support network interface virtualization and Cisco Data Center Virtual Machine Fabric Extender (VM-FEX) technology.

Figure 1. Cisco UCS C24 M3 Server

© 2013 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Applications

Not all storage-intensive workloads are alike, and the Cisco UCS C24 M3 server's disk configuration delivers balanced performance and expandability to best meet individual workload requirements. With up to 12, 16 or 24 internal drives, the Cisco UCS C24 M3 optionally offers 10,000- and 15,000-RPM SAS drives to deliver a high number of I/O operations per second (IOPS) for transactional workloads such as database management systems. In addition, high-capacity SATA drives provide an economical, large-capacity solution.

The Cisco UCS C24 M3 further increases performance and customer choice over many types of storage-intensive applications such as:

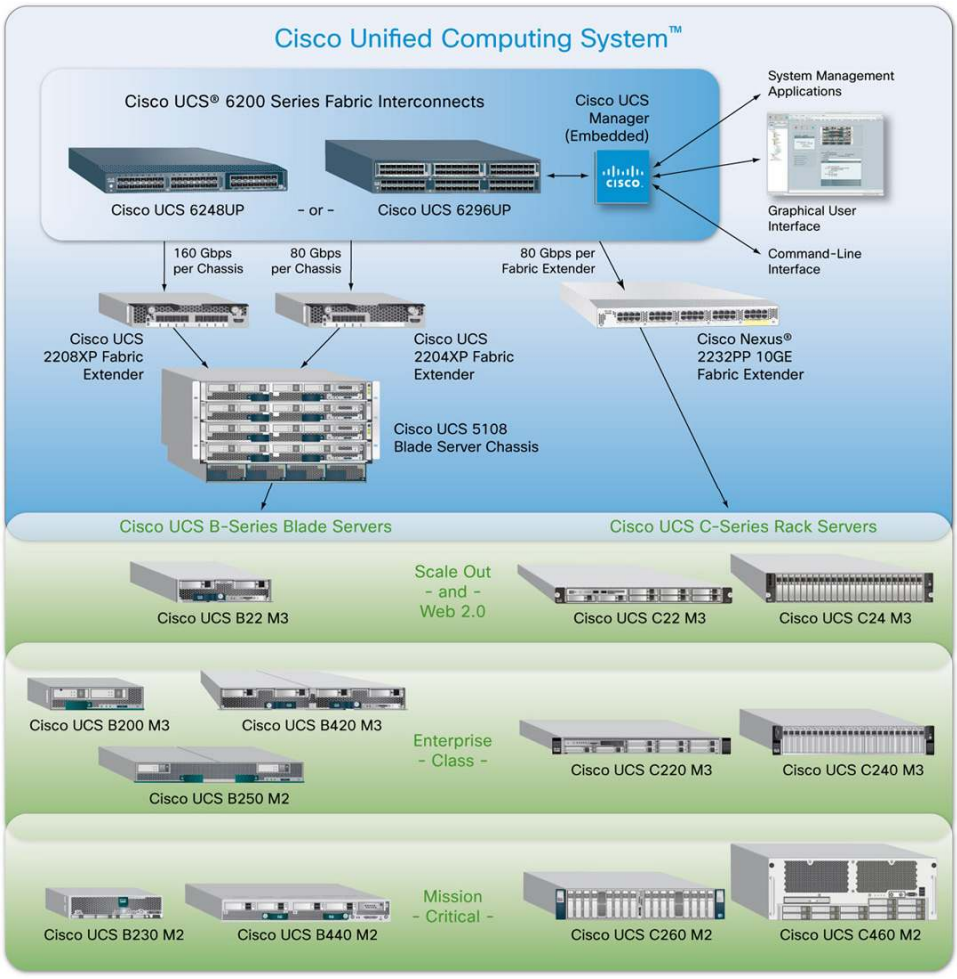
- IT and Web Infrastructure
- Big data
- Consolidation
- Storage server
- Entry-level virtualization
- Small to Medium databases
- File Server
- Storage-intensive infrastructure

Cisco UCS Servers Change the Economics of the Data Center

Cisco continues to lead in data center innovation with infrastructure as a service (IaaS), bare metal, virtualized servers, and cloud computing with the introduction of new building blocks such as the C24 M3 server for Cisco UCS that extend the system's exceptional simplicity, agility, and efficiency (Figure 2). The C24 M3 server also continues Cisco's commitment to delivering uniquely differentiated value, fabric integration, and ease of management that is exceptional in the marketplace.

© 2013 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Figure 2. Cisco UCS Components


Cisco Unified Computing System™
Cisco UCS® 6200 Series Fabric Interconnects
Cisco UCS Manager (Embedded)
System Management Applications
Cisco UCS 6248UP
- or -
Cisco UCS 6296UP
Graphical User Interface
Command-Line Interface
160 Gbps per Chassis
80 Gbps per Chassis
80 Gbps per Fabric Extender
Cisco UCS 2208XP Fabric Extender
Cisco UCS 2204XP Fabric Extender
Cisco Nexus® 2232PP 10GE Fabric Extender
Cisco UCS 5108 Blade Server Chassis
Cisco UCS B-Series Blade Servers
Cisco UCS C-Series Rack Servers
Scale Out - and - Web 2.0
Cisco UCS B22 M3
Cisco UCS C22 M3
Cisco UCS C24 M3
Cisco UCS B200 M3
Cisco UCS B420 M3
Cisco UCS B250 M2
Enterprise - Class -
Cisco UCS C220 M3
Cisco UCS C240 M3
Mission - Critical -
Cisco UCS B230 M2
Cisco UCS B440 M2
Cisco UCS C260 M2
Cisco UCS C460 M2

For example, Cisco innovations, such as the form-factor-agnostic Cisco UCS Manager software, allows administrators to create a software model of a desired server (using Cisco service profiles and templates) and then instantiate that server and its I/O connectivity by associating a model with physical resources. This stateless approach contrasts with the traditional method of configuring each system resource manually, one at a time, through individual element managers. Unlike vendors of traditional systems, Cisco uses a unified management model with service profiles that can be moved easily between any Cisco UCS servers, whether blade server or rack server, in a Cisco UCS Manager domain.

Other Cisco UCS building blocks include enhanced server I/O options and expanded Cisco UCS fabric interconnects that extend scalability, investment protection, and management simplicity for both rack and blade systems. Here are a few examples of investment protection:

- Fabric extenders can be upgraded using the same fabric interconnects and the same Cisco UCS VIC 1225.
- Fabric interconnect hardware can be upgraded independently of fabric extenders and rack servers.

© 2013 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

In addition, Cisco continues to innovate in nearly all hardware and software components of Cisco UCS, helping ensure that more powerful rack servers have adequate I/O bandwidth, management scalability, and investment protection both now and in the future.

The Cisco UCS C24 M3 is also part of a larger family of rack servers: the Cisco UCS C-Series Rack Servers. Designed to operate both in standalone environments and as part of Cisco UCS, all Cisco UCS C-Series servers complement and extend Cisco innovation, investment protection, and simplicity. Cisco UCS C-Series servers provide innovations such as a standards-based unified network fabric, Cisco Data Center VM-FEX virtualization support, Cisco UCS Manager software, Cisco fabric extender and fabric interconnect architectures, and Cisco Extended Memory Technology. With Cisco UCS C-Series innovations, Cisco UCS architectural advantages, software advances, continuous innovation, and unique rack and blade server designs, Cisco UCS is the first truly unified data center platform. In addition, Cisco UCS can transform IT departments through policy-based automation and deep integration with familiar systems management and orchestration tools.

Features and Benefits

Table 1 summarizes the features and benefits of the Cisco UCS C24 M3 Rack Server.

Table 1. Features and Benefits

Feature	Benefit
10-Gbps unified network fabric	• Low-latency, lossless, 10-Gbps Ethernet and industry-standard FCoE and native Fibre Channel fabric • Wire-once deployment model in which changing I/O configurations no longer means installing adapters and recabling racks and switches • Fewer interface cards, cables, and upstream network ports to purchase, power, configure, and maintain
Virtualization optimization	• Cisco Data Center VM-FEX and Adapter FEX technologies, I/O virtualization, and Intel Xeon processor E5-2400 product family features, extending the network directly to virtual machines • Consistent and scalable operational model • Increased security and efficiency with reduced complexity
Unified management (when integrated into Cisco UCS)	• Entire solution managed as a single entity with Cisco UCS Manager, improving operation efficiency and flexibility • Service profiles and templates that implement role- and policy-based management, enabling more effective use of skilled server, network, and storage administrators • Automated provisioning and increased business agility, allowing data center managers to provision applications in minutes rather than days by associating a service profile with a new, added, or repurposed Cisco UCS C24 M3 server • Capability to move virtual machines and their security features and policies from rack to rack or rack to blade or blade to blade • Only Cisco UCS C-Series servers offer a built-in entry point into unified computing
Intel Xeon processor E5-2400 product family	• Automated energy efficiency reduces energy costs by automatically putting the processor and memory in the lowest available power state while still delivering the performance required and flexible virtualization technology that optimizes performance for virtualized environments, including processor support for migration and direct I/O • Up to twice the performance is provided for floating-point operations. Intel Advanced Vector Extensions (AVX) provides new instructions that can significantly improve performance for applications that rely on floating-point or vector computations • Cisco UCS C-Series servers keep pace with Intel Xeon processor innovation by offering the latest processors with an increase in processor frequency and improved security and availability features. With the increased performance provided by the Intel Xeon processor E5-2400 product family, Cisco UCS C-Series servers offer an improved price-to-performance ratio, making Cisco UCS servers among the best values in the industry • Advanced reliability features, including Machine Check Architecture Recovery, automatically monitor, report, and recover from hardware errors to maintain data integrity and keep mission-critical services online • Hardened protection for virtual and cloud Environments: Establish trusted pools of virtual resources with Intel® Trusted Execution Technology (Intel® TXT). Intel TXT helps ensure that physical servers and hypervisors boot only into cryptographically verified “known good states.” It safeguards your business more effectively by protecting your platform from the insertion of malware during or prior to launch

© 2013 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Feature	Benefit
High-capacity, flexible internal storage	Up to 12 (LFF), 16 (SFF) or 24 (SFF) front-accessible, hot-swappable, SFF SAS or SATA drives for local storage, providing redundancy options and ease of serviceability • Balanced performance and capacity to meet application needs • 15,000-RPM SAS drives for highest performance • 10,000-RPM SAS drives for high performance and value • 7200-RPM SATA drives for high capacity and value
RAID 0, 1, 5, 6, 10, 50, and 60 support	A choice of RAID controllers to provide data protection for up to 12 (LFF), 16 (SFF) or 24 (SFF) SAS or SATA drives in PCIe
Cisco UCS C-Series Integrated Management Controller (CIMC)	• Web user interface for server management; remote keyboard, video, and mouse (KVM); virtual media; and administration • Virtual media support for remote CD and DVD drives as if local • Intelligent Platform Management Interface (IPMI) 2.0 support for out-of-band management through third-party enterprise management systems • Command-line interface (CLI) for server management
Fast-memory support	12 DIMM slots supporting up to 1333 or 1600 MHz of memory for optimal performance
Redundant fans and power supplies	• Dual, redundant and hot-swap fans and power supplies for enterprise-class reliability and uptime • Power efficiency through Cisco common form-factor platinum power supplies (450 and 650W)
5 PCIe "Generation" 3.0 slots	• Flexibility, increased performance, and compatibility with industry standards • PCIe "Generation" 3.0 slots, which are estimated to substantially increase the bandwidth compared to the previous generation and offer more flexibility while maintaining compatibility with PCIe 2.0
Integrated dual-port Gigabit Ethernet	• Outstanding network I/O performance and increased network efficiency and flexibility • Increased network availability when configured in failover configurations

Product Specifications

Table 2 lists the specifications for the Cisco UCS C24 M3 server.

Table 2. Product Specifications

Item	Specification
Processors	• 1 or 2 Intel Xeon processor E5-2400 product family CPUs • For a complete list of processor options, please refer to the corresponding SpecSheet
Memory	• 12 DIMM slots • Support for DDR3 registered DIMMs • Support for DDR3 low-voltage DIMMs • Advanced error-correcting code (ECC) • Mirroring option
PCIe slots	• Riser 1: ◦ One x16 PCIe Gen 3 slot, x16 extended connector (Cisco CNIC), half-length, full-height, with NCSI1 and Cisco CNIC2 support. The Cisco 1225 virtual interface card requires an NCSI slot ◦ One x4 PCIe Gen 3 slot, x8 connector, half-length, full-height, no NCSI support • Riser 2: ◦ One x8 PCIe Gen 3 slot, x16 connector, half-length, half-height ◦ One x8 PCIe Gen 3 slot, x8 connector, half-length, half-height ◦ One x8 PCIe Gen 3 slot, x8 connector, half-length, half-height
RAID	• For a complete list of RAID options, please refer to the corresponding SFF SpecSheet or LFF SpecSheet
Hard drives	• Up to 16 or 24 front-accessible, hot-swappable, 2.5-inch SFF (Small Form Factor) SAS or SATA drives • Up to 12 front-accessible, hot-swappable, 3.5-inch LFF (Large Form Factor) SAS or SATA drives
Hard disk options	**2.5-inch SFF drive options:** • For a complete list of drive options, please refer to the corresponding SpecSheet **3.5-inch LFF drive options:** • For a complete list of drive options, please refer to the corresponding SpecSheet

© 2013 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Item	Specification
Cisco UCS Integrated Management Controller	• Integrated Emulex Pilot-3 Baseboard Management Controller (BMC) • IPMI 2.0 compliant for management and control • One 10/100/1000 Ethernet out-of-band management interface, or 1 Gigabit Ethernet LOM or Cisco VIC 1225 access • CLI and WebGUI management tool for automated, lights-out management • KVM, vMedia
Front-panel connector	Two USB 2.0 ports
Front-panel locator LED	Indicator to help direct administrators to specific servers in large data center environments; a front-panel controller provides status indications (LEDs) and control buttons: • Asset tag (serial number) • Power button/power status • Identification • System status • Fan status • Temperature status • Power supply status • Network link activity
Additional rear connectors	Additional interfaces including a VGA video port (DB - 15), 4 USB 2.0 ports, 1 Gigabit Ethernet dedicated management port, dual 1 Gigabit Ethernet ports, a serial port (DB-9)
Physical dimensions (H x W x D)	2RU: 3.45 x 16.93 x 26.0 in (8.76 x 43.0 x 66.05 cm)
Temperature: Operating	41 to 104℉ (5 to 40℃) (derate the maximum tempera ture by 1℃ per every 305m of altitude above sea level)
Temperature: Nonoperating	-40 to 149℉ (-40 to 65℃)
Humidity: Operating	10 to 90% noncondensing
Humidity: Nonoperating	5 to 93% noncondensing
Altitude: Operating	0 to 10,000 ft (0 to 3000m); maximum ambient temperature decreases by 1℃ per 300m
Altitude: Nonoperating	40,000 ft (12,000m)

Regulatory Standards

Table 3 lists regulatory standards compliance information.

Table 3. Regulatory Standards Compliance: Safety and EMC

Specification	Description
Safety	• UL 60950-1 No. 21CFR1040 Second Edition • CAN/CSA-C22.2 No. 60950-1 Second Edition • IEC 60950-1 Second Edition • EN 60950-1 Second Edition • IEC 60950-1 Second Edition • AS/NZS 60950-1 • GB4943 2001
EMC: Emissions	• 47CFR Part 15 (CFR 47) Class A • AS/NZS CISPR22 Class A • CISPR2 2 Class A • EN55022 Class A • ICES003 Class A • VCCI Class A • EN61000-3-2 • EN61000-3-3 • KN22 Class A • CNS13438 Class A

© 2013 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Specification	Description
EMC: Immunity	• EN55024 • CISPR24 • EN300386 • KN24

Ordering Information

For a complete list of part numbers, please refer to the corresponding SFF SpecSheet or LFF SpecSheet.

Cisco Unified Computing Services

Using a unified view of data center resources, Cisco and our industry-leading partners deliver services that accelerate your transition to a Cisco UCS C-Series Rack Server solution. Cisco Unified Computing Services helps you quickly deploy the servers, optimize ongoing operations to better meet your business needs, and migrate to Cisco's unified computing architecture. For more information, visit http://www.cisco.com/go/unifiedcomputingservices.

For More Information

Please visit http://www.cisco.com/go/unifiedcomputing.

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)

Printed in USA C78-706103-04 02/13

© 2013 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.